WEST

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Main Menu | Search Form | Posting Counts | Show S Numbers | Edit S Numbers | Preferences | Cases

Search Results -

Terms	Documents
hydroxyphenylpyruvate and inhibitor and transform?	4

Database:
US Patents Full-Text Database
US Pre-Grant Publication Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search: L7

Refine Search

Recall Text | Clear

Search History

DATE: Monday, October 28, 2002 Printable Copy Create Case

Set Name side by side	**Query**	**Hit Count**	**Set Name** result set
	DB=USPT,DWPI; PLUR=YES; OP=OR		
L7	hydroxyphenylpyruvate and inhibitor and transform?	4	L7
L6	hydroxyphenylpyruvate and inhibitor.ab. and transform?	1	L6
L5	HPPD and inhibitor.ab. and transform?	1	L5
L4	HPPD adj inhibitor and transform?	1	L4
L3	9854330	3	L3
L2	9749816	5	L2
L1	9924585	2	L1

END OF SEARCH HISTORY

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Search Results -

Terms	Documents
cells adj bleached and HPPD adj inhibitor	1

US Patents Full-Text Database
US Pre-Grant Publication Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
Database: IBM Technical Disclosure Bulletins

Search: L9

Refine Search

Recall Text | Clear

Search History

DATE: Monday, October 28, 2002 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
	DB=USPT,PGPB,DWPI; PLUR=YES; OP=OR		
L9	cells adj bleached and HPPD adj inhibitor	1	L9
L8	cells adj bleached and HPPD adj inhibitor and before adj transformation	1	L8
L7	cells adj bleached and HPPD adj inhibitor and before(w)transformation	1700252	L7
L6	20020100076	2	L6
	DB=USPT,DWPI; PLUR=YES; OP=OR		
L5	culture and HPPD and bleaching	4	L5
L4	HPPD and treatment and bleaching	4	L4
L3	HPPD and pretreatment	0	L3
L2	HPPD and herbicide and pretreatment	0	L2
L1	treatment and transformation and HPPD and inhibitor	3	L1

```
FILE 'HOME' ENTERED AT 10:47:16 ON 28 OCT 2002

=> file agricola biosis embase caplus
COST IN U.S. DOLLARS                              SINCE FILE     TOTAL
                                                       ENTRY   SESSION
FULL ESTIMATED COST                                     0.21      0.21

FILE 'AGRICOLA' ENTERED AT 10:47:46 ON 28 OCT 2002

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=> s hydroxyphenylpyruvate and bleaching and tissue
L1          16 HYDROXYPHENYLPYRUVATE AND BLEACHING AND TISSUE

=> s l1 and plant
L2          16 L1 AND PLANT

=> s l2 and tissue(w)culture
L3           0 L2 AND TISSUE(W) CULTURE

=> duplicate remove l2
DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, EMBASE, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L2
L4           8 DUPLICATE REMOVE L2 (8 DUPLICATES REMOVED)

=> d l4 1-8 ti

L4   ANSWER 1 OF 8  AGRICOLA                           DUPLICATE 1
TI   Isoxaflutole: the background to its discovery and the basis of its
     herbicidal properties.

L4   ANSWER 2 OF 8  CAPLUS  COPYRIGHT 2002 ACS
TI   Discovery of benzoyl-3-phenylpyrazole herbicides

L4   ANSWER 3 OF 8  CAPLUS  COPYRIGHT 2002 ACS
TI   Pyridine as a replacement for the phenyl moiety of benzoylpyrazoles

L4   ANSWER 4 OF 8  CAPLUS  COPYRIGHT 2002 ACS
TI   Benzoyl-1,3-disubstitutedpyrazole herbicides

L4   ANSWER 5 OF 8  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
TI   Pyridine as a replacement for the phenyl moiety of benzoylpyrazoles.

L4   ANSWER 6 OF 8  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
TI   The phytotoxic lichen metabolite, usnic acid, is a potent inhibitor of
     plant p-hydroxyphenylpyruvate dioxygenase.

L4   ANSWER 7 OF 8  AGRICOLA                           DUPLICATE 3
TI   The discovery and structural requirements of inhibitors of
     p-hydroxypenylpyruvate dioxygenase.

L4   ANSWER 8 OF 8  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 4
TI   SC-0051, a 2-benzoylcyclohexane-1,3-dione bleaching herbicide,
     is a potent inhibitor of the enzyme p-hydroxyphenylpyruvate
```

```
     dioxygenase.


=> s tissue(w)culture and plant and pre(w)treat? and selection
   3 FILES SEARCHED...
L5            0 TISSUE(W) CULTURE AND PLANT AND PRE(W) TREAT? AND SELECTION

=> s tissue(w)culture and plant and pretreat? and selection
L6           12 TISSUE(W) CULTURE AND PLANT AND PRETREAT? AND SELECTION

=> duplicate remove l6
DUPLICATE PREFERENCE IS 'BIOSIS, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L6
L7           11 DUPLICATE REMOVE L6 (1 DUPLICATE REMOVED)

=> d l7 1-11 ti

L7   ANSWER 1 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   Bromodeoxyuridine combined with UV light and gamma irradiation promotes
     the production of asymmetric somatic hybrid calli

L7   ANSWER 2 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   A new one-step anther culture method which allows short duration of
     culture for regeneration of rice plant through somatic
     embryogenesis

L7   ANSWER 3 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   The effect of in vivo and in vitro aluminum treatment on anther culture
     response of triticale x wheat hybrids

L7   ANSWER 4 OF 11  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE
     1
TI   Direct organogenesis in hop: A prerequisite for an application of A.
     tumefaciens-mediated transformation.

L7   ANSWER 5 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   Restoration of regeneration potential of long-term cultures of red fescue
     (Festuca rubra L.) by elevated sucrose levels

L7   ANSWER 6 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   Effect of organic acid pretreatment on the regeneration and
     development (conversion) of whole plants from callus cultures of
     alfalfa, Medicago sativa L

L7   ANSWER 7 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   Restoration of the regeneration potential of long-term cell culture in
     rice (Oryza sativa L.) by salt pretreatment

L7   ANSWER 8 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   A comparison of APM-induced micronucleation and influence of some factors
     in various genotypes of potato and Nicotiana

L7   ANSWER 9 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   Anther cultures of Brassica napus L

L7   ANSWER 10 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   The measurement of isotonicity and maintenance of osmotic balance in
     plant protoplast manipulations

L7   ANSWER 11 OF 11  CAPLUS  COPYRIGHT 2002 ACS
TI   Haploid plant production and use
```

```
=>
<------User Break------>

=> file agricola biosis embase caplus
COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                    37.42      37.63

FILE 'AGRICOLA' ENTERED AT 10:52:50 ON 28 OCT 2002

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=> pretreatment with selectable marker
PRETREATMENT IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s pretreatment with selectable marker
L8            0 PRETREATMENT WITH SELECTABLE MARKER

=> s pretreat? and selectable(w)marker
L9           20 PRETREAT? AND SELECTABLE(W) MARKER

=> s pretreat?(w)selectable(w)marker
L10           0 PRETREAT?(W) SELECTABLE(W) MARKER

=> duplicate remove l9
DUPLICATE PREFERENCE IS 'BIOSIS, EMBASE, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L9
L11            9 DUPLICATE REMOVE L9 (11 DUPLICATES REMOVED)

=> d l11 1-9

L11  ANSWER 1 OF 9  CAPLUS  COPYRIGHT 2002 ACS
AN   2001:797987  CAPLUS
DN   135:340165
TI   A method for plant transformation based on a pollination-fecundation
     pathway by using silicon carbide fiber technique
IN   Korol, Abraham; Fahima, T.; Nevo, Evitar
PA   Multiqtl Ltd., Israel; Karmali, Rashida A.
SO   PCT Int. Appl., 38 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
PI   WO 2001080627      A1   20011101       WO 2001-US12725  20010419
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
             HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
             RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN,
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            YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
            BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
PRAI US 2000-552147     A    20000419
RE.CNT  9      THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
               ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11  ANSWER 2 OF 9  CAPLUS  COPYRIGHT 2002 ACS
AN   1998:786504  CAPLUS
DN   129:340528
TI   Transformation of Saccharomyces cerevisiae by electroporation involving
     lithium acetate and dithiothreitol
IN   Thompson, John R.
PA   Merck and Co., Inc., USA
SO   Brit. UK Pat. Appl., 12 pp.
     CODEN: BAXXDU
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
PI   GB 2319033        A1    19980513       GB 1997-20706    19970930
PRAI US 1996-27773P    P     19961004

L11  ANSWER 3 OF 9  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
AN   1997:305046  BIOSIS
DN   PREV199799612849
TI   Epstein-Barr virus infection of human gastric carcinoma cells: Implication
     of the existence of a new virus receptor different from CD21.
AU   Yoshiyama, Hironori; Imai, Shousuke; Shimizu, Norio; Takada, Kenzo (1)
CS   (1) Dep. Virol., Cancer Inst., Hokkaido Univ. Sch. Med., N15 W7, Kita-ku,
     Sapporo 060 Japan
SO   Journal of Virology, (1997) Vol. 71, No. 7, pp. 5688-5691.
     ISSN: 0022-538X.
DT   Article
LA   English

L11  ANSWER 4 OF 9  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
AN   1997:273674  BIOSIS
DN   PREV199799565392
TI   Transient selection during vaccinia virus recombination with insertion
     vectors without selectable markers.
AU   Kurilla, Michael G.
CS   Dep. Pathol. Microbiol., Univ. Va. Health Sci. Center, Charlottesville, VA
     22908 USA
SO   Biotechniques, (1997) Vol. 22, No. 5, pp. 906-910.
     ISSN: 0736-6205.
DT   Article
LA   English

L11  ANSWER 5 OF 9  CAPLUS  COPYRIGHT 2002 ACS
AN   1996:534946  CAPLUS
DN   125:160388
TI   Production and administration of high titer recombinant retroviruses in
     human cells or body fluids
IN   Jolly, Douglas J.; Barber, Jack R.; Chang, Stephen M. W.; Respess, James
     G.; Allen, John R.; Bodner, Mordechai; Chong, Kimberly; De La Vega, Dan,
     Jr.; Depolo, Nicholas J.; et al.
PA   Chiron Viagene, Inc., USA
SO   PCT Int. Appl., 126 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
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FAN.CNT 1
     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ---------------   ----  --------      ---------------  --------
PI   WO 9621014         A2   19960711      WO 1995-US16852  19951222
     WO 9621014         A3   19960926
         W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI,
             GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD,
             MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ,
             TM, TT
         RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
     AU 9646080         A1   19960724       AU 1996-46080    19951222
     EP 796331          A2   19970924       EP 1995-944227   19951222
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
     JP 10511951        T2   19981117       JP 1996-521113   19951222
PRAI US 1994-367071     A    19941230
     WO 1995-US16852    W    19951222
```

L11 ANSWER 6 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
AN 1995:340712 BIOSIS
DN PREV199598355012
TI Efficient Expression of Functional Human MDR1 Gene in Murine Bone Marrow After Retroviral Transduction of Purified Hematopoietic Stem Cells.
AU Licht, Thomas Vvan Aksentijevich; Gottesman, Michael M.; Pastan, Ira (1)
CS (1) Lab. Mol. Biol., Natl. Cancer Inst., Natl. Inst. Health, Bldg. 37 Room 4E16, 37 Convent Dr. MSC 4255, Bethesda, MD 20892-4255 USA
SO Blood, (1995) Vol. 86, No. 1, pp. 111-121.
ISSN: 0006-4971.
DT Article
LA English

L11 ANSWER 7 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 4
AN 1992:503614 BIOSIS
DN BA94:122139
TI DECREASED UROKINASE RECEPTOR EXPRESSION BY OVEREXPRESSION OF THE PLASMINOGEN ACTIVATOR IN A COLON CANCER CELL LINE.
AU HOLLAS W; SORAVIA E; MAZAR A; HENKIN J; BLASI F; BOYD D
CS TUMOR BIOL. DEP., BOX 108, M.D. ANDERSON CANCER CENT., HOUSTON, TEX. 77030, USA.
SO BIOCHEM J, (1992) 285 (2), 629-634.
CODEN: BIJOAK. ISSN: 0306-3275.
FS BA; OLD
LA English

L11 ANSWER 8 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 5
AN 1992:96305 BIOSIS
DN BA93:52855
TI AN ELECTROPORATION-BASED SYSTEM FOR HIGH-EFFICIENCY TRANSFORMATION OF GERMINATED CONIDIA OF FILAMENTOUS FUNGI.
AU CHAKRABORTY B N; PATTERSON N A; KAPOOR M
CS CELL. MOL. MICROBIAL BIOL. DIV., DEP. BIOL. SCI., UNIV. CALGARY, CAGARY, ALTA., CAN. T2N 1N4.
SO CAN J MICROBIOL, (1991) 37 (11), 858-863.
CODEN: CJMIAZ. ISSN: 0008-4166.
FS BA; OLD
LA English

L11 ANSWER 9 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 6
AN 1989:494811 BIOSIS
DN BA88:121348
TI EXPRESSION OF MAMMALIAN O-6 ALKYLGUANINE-DNA ALKYLTRANSFERASE IN A CELL LINE SENSITIVE TO ALKYLATING AGENTS.
AU DOLAN M E; NORBECK L; CLYDE C; HORA N K; ERICKSON L C; PEGG A E
CS DEP. PHYSIOLOGY, MILTON S. HERSHEY MED. CENT., PENNSYLVANIA STATE UNIV., COLL. MED., HERSHEY, PA. 17033.

```
SO   CARCINOGENESIS (LOND), (1989) 10 (9), 1613-1620.
     CODEN: CRNGDP. ISSN: 0143-3334.
FS   BA; OLD
LA   English


=> plant(w)tissue(w)culture and transform? and pretreat? and selection
PLANT(W)TISSUE(W)CULTURE IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s plant(w)tissue(w)culture and transform? and pretreat? and selection
L12          2 PLANT(W) TISSUE(W) CULTURE AND TRANSFORM? AND PRETREAT? AND
               SELECTION

=> d l12 1-2

L12  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2002 ACS
AN   1994:553477  CAPLUS
DN   121:153477
TI   Direct organogenesis in hop - a prerequisite for an application of A.
     tumefaciens-mediated transformation
AU   Rakousky, S.; Matousek, J.
CS   Inst. Plant Mol. Biol., Acad. Sci. Czech Republic, Ceske Budejovice, 370
     05, Czech Rep.
SO   Biologia Plantarum (1994), 36(2), 191-200
     CODEN: BPABAJ; ISSN: 0006-3134
DT   Journal
LA   English

L12  ANSWER 2 OF 2  CAPLUS  COPYRIGHT 2002 ACS
AN   1990:494985  CAPLUS
DN   113:94985
TI   A comparison of APM-induced micronucleation and influence of some factors
     in various genotypes of potato and Nicotiana
AU   Ramulu, K. S.; Verhoeven, H. A.; Dijkhuis, P.; Gilissen, L. J. W.
CS   Cent. Plant Breed. Res., Wageningen, NL-6700 AA, Neth.
SO   Plant Science (Shannon, Ireland) (1990), 69(1), 123-33
     CODEN: PLSCE4; ISSN: 0168-9452
DT   Journal
LA   English


=> d l12 1-2 ab

L12  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2002 ACS
AB   The regeneration ability of primary explants derived from mericlones of
     two com. Bohemian hops was investigated.  It was found that these hops are
     able to regenerate shoots by direct organogenesis on media contg. BAP or
     zeatin at concns. 0.5-2 mg dm-3.  The highest regeneration of shoots was
     achieved from either petioles or internodes at frequencies 21 and 52%,
     resp., on the medium contg. zeatin (2 mg dm-3), while relatively low amt.
     of regenerated shoots (1.3 %) was obsd. for leaf blade explants.  On the
     other hand, more efficient rooting occurred on the leaf blades then on
     other explants.  A similar pattern of regeneration was obsd. for hop
     latent viroid (HLVd)-infected mericlones of clone Osvald 31 even though
     viroid concn. in in-vitro cultures was about 8-fold higher than in
     field-grown plants and was 31.1 pg mg-1 of fresh mass in the av.  These
     results suggest that HLVd infection did not impair organogenesis.  High
     2,4-D concn. pretreatment (11 mg dm-3) did not promote somatic
     embryogenesis.  Although this treatment suppressed direct organogenesis,
     the inhibition was not complete and in low frequency the shoot
     regeneration was seen.  Sensitivity of hop explants to antibiotics
```

commonly used in Agrobacterium-mediated **transformation** was assayed. It was found that kanamycin (100-200 mg dm-3) suppressed efficiently callogenesis, root formation and shoot proliferation. An estn. of effect of kanamycin (200 mg dm-3) and ticarcillin (500 mg dm-3) on morphogenesis was performed using regeneration medium. The inhibitory effects obsd. suggest that these conditions could be used in Agrobacterium **transformation/selection** system.

L12 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS

AB The results of a comparative study on the induction of micronuclei by the spindle toxin amiprophos-Me (APM) in 9 cell lines of potato and one of N. plumbaginifolia **transformed** by single and binary vectors of Agrobacterium are reported. These cell lines contained various T-DNA introduced genetic markers (hairy root phenotype, hormone autotrophy (HA), opine prodn., kanamycin resistance (KR), .beta.-glucuronidase (GUS) activity, to be used for **selection** and gene localization. Cytol. observations revealed differences between potato and N. plumbaginifolia with respect to the APM-induced micronucleation process and detection of micronucleated cells. The frequency of micronucleation differed among the various cell lines. The percentage of micronucleated cells was significantly increased by alteration of subculture period at the time of APM treatment. Also seedling root meristems showed high frequencies of metaphases and micronucleated cells after APM treatment, thus revealing the efficiency of APM for treatment of tissue cells, esp. to obtain a high metaphase index for karyotype anal. of materials which have low mitotic index as well as to induce micronuclei directly in root meristems of hairy root clones. Anal. of the effect of 2 other chems. (cytochalasin-B and hydroxy urea HU)) showed that addn. of cytochalasin-B as a sequential treatment to APM resulted in enhancement of micronucleation in both species, whereas **pretreatment** with HU gave no increase in the frequencies of metaphases or micronucleated cells in potato. The factors influencing micronucleation of cells are discussed.

```
=> plant(w)transformation and pretreat?(w)with(w)selectable(w)marker
PLANT(W)TRANSFORMATION IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s plant(w)transformation and pretreat?(w)with(w)selectable(w)marker
L13          0 PLANT(W) TRANSFORMATION AND PRETREAT?(W) WITH(W) SELECTABLE(W)
               MARKER

=> s pretreat?(w)with(w)selectable(w)marker
L14          0 PRETREAT?(W) WITH(W) SELECTABLE(W) MARKER

=> s pre(w)treat?(w)with(w)selectable(w)marker
L15          0 PRE(W) TREAT?(W) WITH(W) SELECTABLE(W) MARKER

=> s pre(w)treat(w)with(w)selectable(w)marker
L16          0 PRE(W) TREAT(W) WITH(W) SELECTABLE(W) MARKER

=> s pre(w)treatment(w)with(w)selectable(w)marker
L17          0 PRE(W) TREATMENT(W) WITH(W) SELECTABLE(W) MARKER

=> s pretreatment(w)with(w)selectable(w)marker
L18          0 PRETREATMENT(W) WITH(W) SELECTABLE(W) MARKER

=> s pretreat(w)with(w)selectable(w)marker
L19          0 PRETREAT(W) WITH(W) SELECTABLE(W) MARKER

=> s pretreat and selectable(w)marker
```

```
L20          0 PRETREAT AND SELECTABLE(W) MARKER

=> s pretreat(w)with(w)selection
L21          0 PRETREAT(W) WITH(W) SELECTION

=> s pretreatment(w)with(w)selection
L22          0 PRETREATMENT(W) WITH(W) SELECTION

=> s pretreatment and selection
L23       1932 PRETREATMENT AND SELECTION

=> s l23 and plant
L24        165 L23 AND PLANT

=> s l24 and HPPD(w)inhibitor
L25          0 L24 AND HPPD(W) INHIBITOR

=> s l24 and HPPD
L26          0 L24 AND HPPD

=> s l24 and hydroxyphenylpyruvate
L27          0 L24 AND HYDROXYPHENYLPYRUVATE

=> s l23 and hydroxyphenylpyruvate
L28          0 L23 AND HYDROXYPHENYLPYRUVATE

=> s pretreat? and hydroxyphenylpyruvate
L29          8 PRETREAT? AND HYDROXYPHENYLPYRUVATE

=> duplicate remove l29
DUPLICATE PREFERENCE IS 'BIOSIS, EMBASE, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L29
L30           5 DUPLICATE REMOVE L29 (3 DUPLICATES REMOVED)

=> d l30 1-5 ti

L30  ANSWER 1 OF 5  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
TI   A mouse model of renal tubular injury of tyrosinemia type 1: Development
     of de Toni Fanconi syndrome and apoptosis of renal tubular cells in
     Fah/Hpd double mutant mice.

L30  ANSWER 2 OF 5  CAPLUS  COPYRIGHT 2002 ACS
TI   Suppression by .DELTA.9-tetrahydrocannabinol of induction of hepatic
     tyrosine aminotransferase and tryptophan oxygenase

L30  ANSWER 3 OF 5  EMBASE  COPYRIGHT 2002 ELSEVIER SCI. B.V.
TI   Lethality of tyrosine in mice; its potentiation by decarboxylase
     inhibitors and reversal by ascorbic acid.

L30  ANSWER 4 OF 5  EMBASE  COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 2
TI   On the metabolism of 3H tyrosine in the cerebrospinal fluid of the cat:
     role of transamination.

L30  ANSWER 5 OF 5  CAPLUS  COPYRIGHT 2002 ACS
TI   4-Hydroxyphenylpyruvate and 3,4-dihydroxyphenylpyruvate as
     noradrenaline precursors


=> d l30 1-5 ab

L30  ANSWER 1 OF 5  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
AB   Hereditary tyrosinemia type 1 (HT1) (McKusick 276700), a severe autosomal
     recessive disorder of tyrosine metabolism, is caused by mutations in the
```

fumarylacetoacetate hydrolase gene Fah (EC 3.7.1.2), which encodes the last enzyme in the tyrosine catabolic pathway. HT1 is characterized by severe progressive liver disease and renal tubular dysfunction. Homozygous disruption of the gene encoding Fah in mice causes neonatal lethality (e.g., lethal Albino deletion c14CoS mice), an event that limits use of this animal as a model for HT1. A new mouse model was developed with two genetic defects, Fah and 4-**hydroxyphenylpyruvate** dioxygenase (Hpd). The Fah-/-Hpd-/- mice grew normally without evidence of liver and renal disease, and the phenotype is similar to that in Fah+/+Hpd-/- mice. The renal tubular cells of Fah-/-Hpd-/- mice, particularly proximal tubular cells, underwent rapid apoptosis when homogentisate, the intermediate metabolite between HPD and FAH, was administered to the Fah-/-Hpd-/- mice. Simultaneously, renal tubular function was impaired and Fanconi syndrome occurred. Apoptotic death of renal tubular cells, but not renal dysfunction, was prevented by **pretreatment** of the animals with YVAD, a specific inhibitor of caspases. In the homogentisate-treated Fah-/-Hpd-/- mice, massive amounts of succinylacetone were excreted into the urine, regardless of treatment with inhibitors. It is suggested that apoptotic death of renal tubular cells, as induced by administration of homogentisate to Fah-/-Hpd-/- mice, was caused by an intrinsic process, and that renal apoptosis and tubular dysfunctions in tubular cells occurred through different pathways. These observations shed light on the pathogenesis of renal tubular injury in subjects with FAH deficiency. These Fah-/-Hpd-/- mice can serve as a model in experiments related to renal tubular damage.

L30 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2002 ACS

AB Although i.p. treatment with hydrocortisone acetate (HC) [50-03-3] (150 mg/kg, 2 h priorto sacrifice) caused a 2.1-fold induction of hepatic tyrosine aminotransferase (TAT) [9014-55-5] activity in mice, **pretreatment** with .DELTA.9-THC (I) [1972-08-3] (200 mg/kg, 2 h prior to sacrifice) decreased this induction to 1.3-fold. When mice were treated with I 1 h prior to HC induction, TAT activity was induced only 1.1-fold over control, while HC alone induced TAT activity 2.5-fold. Even when steroid treatment preceded I administration by 3 h, there was inhibitory activity. Enzyme activity at 0, 3, and 6 h after steroid was 18.7, 41.4, and 55.5 .mu.mol of p-**hydroxyphenylpyruvate**(PPA)/g liver/h, resp. When I was administered at 3 h after steroid and mice killed 3 h later, enzyme activity was reduced to 36.2 .mu.mol PPA/g liver/h. Inhibition of steroid induction was dose-related over a range of 50-400 mg/kg of I. I had little effect on induction of TAT or tryptophan oxygenase [9014-51-1] in mouse liver by tryptophan [73-22-3] and had no effect on tryptophan induction of tryptophn oxygenase in rat liver.

L30 ANSWER 3 OF 5 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.

AB High doses of tyrosine were found to be lethal in mice. The lethality was potentiated by decarboxylase inhibitors which acted by elevating tissues tyrosine levels when given together with large amounts of tyrosine. The lethality of either tyrosine or tyrosine given in combination with decarboxylase inhibitors was found to be correlated with the elevation of tyrosine levels in liver. This toxicity does not appear to involve either tyramine or p hydroxyphenyl pyruvic acid formation. Ascorbic acid **pretreatment** afforded a marked protection against tyrosine toxicity. This compound was found to prevent the elevation of tissue tyrosine levels by stimulating p hydroxyphenyl pyruvic acid oxidase, increasing the urinary excretion and inhibiting the gastrointestinal absorption of tyrosine.

L30 ANSWER 4 OF 5 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 2

AB The formation of phenolic end products from tyrosine metabolism was investigated in the cerebrospinal fluid (CSF) of cats after the administration of 3H tyrosine, 200 .mu.Ci intracisternally. Metabolites from dopamine, noradrenaline, tyramine, octopamine and from transamination were searched for at various times, from 10 min to 3 hr, after the 3H

tyrosine injection. Chromatographic evidence is presented for the formation of 3H p hydroxyphenylacetic acid and 3H p hydroxyphenyllactic acid. The former acid was the major metabolite and analyses of serial samples of CSF showed that the acid was present in high amounts as early as 10 min after 3H tyrosine injection and that considerable radioactivity could also be detected in the 3 hr samples. Relative to the total radioactivity, the highest amounts of 3H p hydroxyphenylacetic acid were formed between 1.5 and 3 hr after the 3H tyrosine administration. The labeled phenolic acid was also demonstrated in different brain regions both after intracisternal and systemic administration of 3H tyrosine. The amounts of 3H p hydroxyphenylacetic acid formed in CSF were not markedly altered by **pretreating** the cats with a monoamine oxidase inhibitor (pargyline). It is thought likely that 3H p hydroxyphenylacetic acid and 3H p hydroxyphenyllactic acid are formed by transamination of 3H tyrosine through the p **hydroxyphenylpyruvate** pathway. The results are discussed in the light of the possible functional relation of transamination to the metabolism of tyrosine as a precursor of catecholamines.

L30 ANSWER 5 OF 5 CAPLUS

AB Thirty min. after mice were subcutaneously injected with 5 mg. of L-dopa-2-14C, 3,4-dihydroxyphenylpyruvate-2-14C (I), L-tyrosine-U-14C, or 4-**hydroxyphenylpyruvate**-2-14C (II), the radioactivity in the catechol amine fraction of the brain was 1.01, 0.43, 0.28, and 0.34% of the radioactivity injected/g. of body wt. Intraperitoneal injections of 100 mg. of pargyline/kg. increased noradrenaline from 33-60 .gamma./kg. of fresh brain tissue. After **pretreatment** with pargyline, intraperitoneal injections of 500 mg. of L-dopa or I/kg. increased noradrenaline content to 0.85 and 0.82 .gamma./g., resp. II was converted into catechol amines possibly in part via I, without transamination to tyrosine.

=>

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=> file agricoal biosis embase caplus
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accessing the remaining file names entered.
ENTER A FILE NAME OR (IGNORE):agricola
COST IN U.S. DOLLARS                                 SINCE FILE      TOTAL
                                                          ENTRY    SESSION
FULL ESTIMATED COST                                        0.21       0.21

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FILE 'BIOSIS' ENTERED AT 08:39:03 ON 28 OCT 2002
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=> s p-hydroxyphenylpyruvate(w)dioxygenase and matker
L1            0 P-HYDROXYPHENYLPYRUVATE(W) DIOXYGENASE AND MATKER

=> s p-hydroxyphenylpyruvate(w)dioxygenase and marker
L2            3 P-HYDROXYPHENYLPYRUVATE(W) DIOXYGENASE AND MARKER

=> d l2 1-3 ti

L2   ANSWER 1 OF 3  AGRICOLA
TI   Gene discovery and gene function assignment in filamentous fungi.

L2   ANSWER 2 OF 3  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
TI   Disruption of tyrosine degradation pathway may lead to liver
     carcinogenesis.

L2   ANSWER 3 OF 3  CAPLUS  COPYRIGHT 2002 ACS
TI   Transgenic plants with increased geranylgeranyl reductase activity
     resulting higher tocopherol biosynthesis


=> d l2 3 ibib ab kwic

L2   ANSWER 3 OF 3  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         1999:311311  CAPLUS
DOCUMENT NUMBER:          130:333751
TITLE:                    Transgenic plants with increased geranylgeranyl
                          reductase activity resulting higher tocopherol
                          biosynthesis
INVENTOR(S):              Grimm, Bernhard; Tanaka, Ryouichi
PATENT ASSIGNEE(S):       Institut fur Pflanzengenetik und
                          Kulturpflanzenforschung, Germany
SOURCE:                   PCT Int. Appl., 66 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 German
FAMILY ACC. NUM. COUNT:   2
PATENT INFORMATION:
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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9923231	A2	19990514	WO 1998-EP6851	19981029
WO 9923231	A3	19990729		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2306458	AA	19990514	CA 1998-2306458	19981029
AU 9919616	A1	19990524	AU 1999-19616	19981029
AU 747854	B2	20020523		
DE 19849960	A1	19990805	DE 1998-19849960	19981029
EP 1025250	A2	20000809	EP 1998-964393	19981029
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
BR 9813165	A	20000822	BR 1998-13165	19981029
JP 2001521745	T2	20011113	JP 2000-519087	19981029
PRIORITY APPLN. INFO.:			DE 1997-19747739 A	19971029
			WO 1998-EP6851 W	19981029

AB The invention concerns a nucleic acid sequence coding for the plant protein geranylgeranyl pyrophosphate reductase (GGPR), its cloning and transformation into prokaryotes or eukaryotes for the increased biosynthesis of tocopherols, vitamin K1 and chlorophyll. Plasmids vectors contg. the GGPR sequence, tissue and developmental-specific promoters, enhancer sequences and signal peptide coding sequences can be transfered in sense or antisense orientation into cells. Feed and fodder plants can be transformed, e.g. rape, soy, beet, tomato and potato. Targets for transformation are propagules, e.g. protoplast, calli, seeds, bulbs etc. The nucleic acid sequence or parts of it can be used as probes for the identification/isolation of nucleic acids coding for GGPR. Also antibodies to the nucleic acid or the GGPR can be raised. The transformed plants demonstrate increased herbicide resistance. A version of the invention, a double transformant is produced by introducing the nucleic acid sequence coding for hydroxyphenylpyruvate-dioxygenase. The nucleic acid sequence coding for GGPR was isolated from tobacco using an expressed sequence tag from Arabidopsis thaliana; the sequence was inserted into the BinAR-TX behind the CaMV 35S promoter; the vector was transformed into Agrobacterium tumefaciens that was used to transfect Nicotiana tabacum. The transformed tobacco plants manifested increased tocopherol content and GGPR activity. In another expt., the CHL P genes, coding for GGPR were coexpressed with the HPD genes coding for hydroxyphenylpyruvate-dioxygenase using Bin-Hyg-TX vector that carries the hygromycin resistance **marker** gene. The double transformant showed an addnl. increase in tocopherol prodn. and hygromycin resistance. Transgenic tobacco was also subject to oxidative stress using acifluorfen and Rose Bengal. The oxidative stress resistance was 2-3 times higher compared to the wild type.

AB The invention concerns a nucleic acid sequence coding for the plant protein geranylgeranyl pyrophosphate reductase (GGPR), its cloning and transformation into prokaryotes or eukaryotes for the increased biosynthesis of tocopherols, vitamin K1 and chlorophyll. Plasmids vectors contg. the GGPR sequence, tissue and developmental-specific promoters, enhancer sequences and signal peptide coding sequences can be transfered in sense or antisense orientation into cells. Feed and fodder plants can be transformed, e.g. rape, soy, beet, tomato and potato. Targets for transformation are propagules, e.g. protoplast, calli, seeds, bulbs etc. The nucleic acid sequence or parts of it can be used as probes for the identification/isolation of nucleic acids coding for GGPR. Also antibodies to the nucleic acid or the GGPR can be raised. The transformed plants demonstrate increased herbicide resistance. A version of the

invention, a double transformant is produced by introducing the nucleic acid sequence coding for hydroxyphenylpyruvate-dioxygenase. The nucleic acid sequence coding for GGPR was isolated from tobacco using an expressed sequence tag from Arabidopsis thaliana; the sequence was inserted into the BinAR-TX behind the CaMV 35S promoter; the vector was transformed into Agrobacterium tumefaciens that was used to transfect Nicotiana tabacum. The transformed tobacco plants manifested increased tocopherol content and GGPR activity. In another expt., the CHL P genes, coding for GGPR were coexpressed with the HPD genes coding for hydroxyphenylpyruvate-dioxygenase using Bin-Hyg-TX vector that carries the hygromycin resistance **marker** gene. The double transformant showed an addnl. increase in tocopherol prodn. and hygromycin resistance. Transgenic tobacco was also subject to oxidative stress using acifluorfen and Rose Bengal. The oxidative stress resistance was 2-3 times higher compared to the wild type.

```
IT   DNA sequences
     Protein sequences
        (of geranylgeranyl pyrophosphate reductase of tobacco and p-
        hydroxyphenylpyruvate dioxygenase of Arabidopsis;
        transgenic plants with increased geranylgeranyl reductase activity
        resulting higher tocopherol biosynthesis)
IT   59-02-9, .alpha.-Tocopherol   7616-22-0, .gamma.-Tocopherol   9029-72-5,
     p-Hydroxyphenylpyruvate dioxygenase
     11104-38-4, Vitamin K1   86922-67-0, Geranylgeranyl reductase
     RL: AGR (Agricultural use); BOC (Biological occurrence); BSU (Biological
     study, unclassified); BIOL (Biological study); OCCU (Occurrence); USES
     (Uses)
        (transgenic plants with increased geranylgeranyl reductase activity
        resulting higher tocopherol biosynthesis)


=> s p-hydroxyphenylpyruvate(w)dioxygenase and selection
L3           0 P-HYDROXYPHENYLPYRUVATE(W) DIOXYGENASE AND SELECTION

=> s p-hydroxyphenylpyruvate(w)dioxygenase and plant and transform?
L4          10 P-HYDROXYPHENYLPYRUVATE(W) DIOXYGENASE AND PLANT AND TRANSFORM?

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UPLICATE IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

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N IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

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DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, EMBASE, CAPLUS'
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PROCESSING COMPLETED FOR L4
L5             7 DUPLICATE REMOVE L4 (3 DUPLICATES REMOVED)

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L5   ANSWER 1 OF 7  CAPLUS  COPYRIGHT 2002 ACS
TI   Chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene
     and transgenic herbicide-resistant plants

L5   ANSWER 2 OF 7  CAPLUS  COPYRIGHT 2002 ACS
TI   A herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and the gene
     encoding it and the development of herbicide-tolerant transgenic
```

plants

L5 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2002 ACS
TI Transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis

L5 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2002 ACS
TI In situ modification of **plant** genes for improved herbicide resistance

L5 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2002 ACS
TI **Plant p-hydroxyphenylpyruvate dioxygenase**: a target for new bleaching herbicides

L5 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2002 ACS
TI Cloning and expression of recombinant **p-hydroxyphenylpyruvate dioxygenase plant** genes for production of resistant cereal **plants**

L5 ANSWER 7 OF 7 AGRICOLA DUPLICATE 1
TI Subcellular localization and purification of a **p-hydroxyphenylpyruvate dioxygenase** from cultured carrot cells and characterization of the corresponding cDNA.

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=> d l5 1-7 ibib
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L5 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:350752 CAPLUS
DOCUMENT NUMBER: 131:1430
TITLE: Chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**
INVENTOR(S): Reygnier, Luc; Sailland, Alain
PATENT ASSIGNEE(S): Rhone Poulenc Agro, Fr.
SOURCE: PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9925842	A1	19990527	WO 1998-FR2414	19981113
W: AL, AU, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IS, JP, KP, KR, KZ, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2771104	A1	19990521	FR 1997-14591	19971117
FR 2771104	B1	20001208		
CA 2309880	AA	19990527	CA 1998-2309880	19981113
AU 9911628	A1	19990607	AU 1999-11628	19981113
AU 747634	B2	20020516		
EP 1032681	A1	20000906	EP 1998-954565	19981113
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
BR 9815628	A	20001024	BR 1998-15628	19981113

PRIORITY APPLN. INFO.: FR 1997-14591 A 19971117
WO 1998-FR2414 W 19981113

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:326059 CAPLUS
DOCUMENT NUMBER: 130:349039
TITLE: A herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and the gene encoding it and the development of herbicide-tolerant transgenic **plants**
INVENTOR(S): Boudec, Philippe; Bourdon, Helene; Dumas, Florence; Rodgers, Matthew; Sailland, Alain
PATENT ASSIGNEE(S): Rhone-Poulenc Agro, Fr.
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9924585	A1	19990520	WO 1998-FR2374	19981106
W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IS, JP, KP, KR, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2770854	A1	19990514	FR 1997-14264	19971107
FR 2770854	B1	20011130		
ZA 9810076	A	19990507	ZA 1998-10076	19981104
CA 2309322	AA	19990520	CA 1998-2309322	19981106
AU 9911603	A1	19990531	AU 1999-11603	19981106
AU 749323	B2	20020620		
EP 1029059	A1	20000823	EP 1998-954530	19981106
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001522608	T2	20011120	JP 2000-520579	19981106

PRIORITY APPLN. INFO.: FR 1997-14264 A 19971107
WO 1998-FR2374 W 19981106
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:311311 CAPLUS
DOCUMENT NUMBER: 130:333751
TITLE: Transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis
INVENTOR(S): Grimm, Bernhard; Tanaka, Ryouichi
PATENT ASSIGNEE(S): Institut fur Pflanzengenetik und Kulturpflanzenforschung, Germany
SOURCE: PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9923231	A2	19990514	WO 1998-EP6851	19981029
WO 9923231	A3	19990729		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,				

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    RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
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   AU 9919616       A1   19990524       AU 1999-19616    19981029
   AU 747854        B2   20020523
   DE 19849960      A1   19990805       DE 1998-19849960 19981029
   EP 1025250       A2   20000809       EP 1998-964393   19981029
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        IE, SI, LT, LV, FI, RO
   BR 9813165       A    20000822       BR 1998-13165    19981029
   JP 2001521745    T2   20011113       JP 2000-519087   19981029
PRIORITY APPLN. INFO.:                DE 1997-19747739 A  19971029
                                      WO 1998-EP6851   W  19981029

L5   ANSWER 4 OF 7  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:          1998:795138  CAPLUS
DOCUMENT NUMBER:           130:62017
TITLE:                     In situ modification of plant genes for
                           improved herbicide resistance
INVENTOR(S):               Hawkes, Timothy Robert; Greenland, Andrew James;
                           Evans, Ian Jeffrey
PATENT ASSIGNEE(S):        Zeneca Limited, UK
SOURCE:                    PCT Int. Appl., 49 pp.
                           CODEN: PIXXD2
DOCUMENT TYPE:             Patent
LANGUAGE:                  English
FAMILY ACC. NUM. COUNT:    1
PATENT INFORMATION:

   PATENT NO.       KIND DATE           APPLICATION NO.  DATE
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   WO 9854330       A1   19981203       WO 1998-GB1499   19980522
    W:  AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
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        CM, GA, GN, ML, MR, NE, SN, TD, TG
   GB 2326163       A1   19981216       GB 1998-11138    19980522
   AU 9875414       A1   19981230       AU 1998-75414    19980522
   EP 1017825       A1   20000712       EP 1998-922954   19980522
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   JP 2002503101    T2   20020129       JP 1999-500360   19980522
PRIORITY APPLN. INFO.:                GB 1997-11015    A  19970528
                                      WO 1998-GB1499   W  19980522
REFERENCE COUNT:           6     THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
                                 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5   ANSWER 5 OF 7  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:          2000:283444  CAPLUS
DOCUMENT NUMBER:           133:161821
TITLE:                     Plant p-
                           hydroxyphenylpyruvate dioxygenase: a
                           target for new bleaching herbicides
AUTHOR(S):                 Garcia, I.; Rodgers, M.; Pepin, R.; Hsieh, Tzung-Fu;
                           Matringe, M.
```

CORPORATE SOURCE: Unite Mixte CNRS/Rhone-Poulenc (UMR 41), Rhone-Poulenc Agrochimie, Lyon, 69263, Fr.
SOURCE: Photosynthesis: Mechanisms and Effects, Proceedings of the International Congress on Photosynthesis, 11th, Budapest, Aug. 17-22, 1998 (1998), Volume 5, 3861-3864. Editor(s): Garab, Gyozo. Kluwer Academic Publishers: Dordrecht, Neth.
CODEN: 68VVAS
DOCUMENT TYPE: Conference
LANGUAGE: English
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:42493 CAPLUS
DOCUMENT NUMBER: 128:111563
TITLE: Cloning and expression of recombinant **p-hydroxyphenylpyruvate dioxygenase plant** genes for production of resistant cereal **plants**
INVENTOR(S): Maxwell, Carl Arthur; Scolnik, Pablo Ariel; Wittenbach, Vernon Arie; Gutteridge, Steven
PATENT ASSIGNEE(S): E.I. Du Pont De Nemours and Co., USA; Maxwell, Carl Arthur; Scolnik, Pablo Ariel; Wittenbach, Vernon Arie; Gutteridge, Steven
SOURCE: PCT Int. Appl., 71 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9749816	A1	19971231	WO 1997-US11295	19970626
W: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TJ, TM, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9736446	A1	19980114	AU 1997-36446	19970626
EP 914447	A1	19990512	EP 1997-933201	19970626
R: DE, ES, FR, GB, IT				
CN 1223688	A	19990721	CN 1997-195920	19970626
BR 9710855	A	19990817	BR 1997-10855	19970626
JP 2000513228	T2	20001010	JP 1998-503580	19970626
PRIORITY APPLN. INFO.:			US 1996-21364P P	19960627
			WO 1997-US11295 W	19970626

L5 ANSWER 7 OF 7 AGRICOLA DUPLICATE 1
ACCESSION NUMBER: 1998:20499 AGRICOLA
DOCUMENT NUMBER: IND20622904
TITLE: Subcellular localization and purification of a **p-hydroxyphenylpyruvate dioxygenase** from cultured carrot cells and characterization of the corresponding cDNA.
AUTHOR(S): Garcia, I.; Rodgers, M.; Lenne, C.; Rolland, A.; Sailland, A.; Matringe, M.
CORPORATE SOURCE: Rhone-Poulenc Agrochimie, Lyon, France.
AVAILABILITY: DNAL (QP501.B64)
SOURCE: The Biochemical journal, Aug 1, 1997. Vol. 325, No. pt.3. p. 761-769

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L5 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2002 ACS

AB The invention concerns a chimeric gene comprising a light-dependent promoter, a sequence coding for an enzyme providing **plants** with tolerance to herbicides inhibitors of hydroxyphenylpyruvate dioxygenase (HPPD), and a terminator or polyadenylation-regulating sequence, wherein the promoter ensures the transcription of chimeric gene in chlorophyll-contg. tissues. Suitable promoters are those of the RuBisCO small subunit gene rbcs, the light-harvesting chlorophyll a/b binding protein gene LHCP, the plastocyanine gene petE, and the phenylalanine ammonia lyase gene pal. The invention also concerns the **transformation** of **plants** and the **plants** **transformed** with said chimera gene. It further concerns a method for growing **transformed plants** which consists in applying a HPPD inhibitor for controlling weeds. Thus, isoxaflutole-resistant tobacco **plants** expressing the Pseudomonas fluorescens HPPD gene from the Helianthus annuus rbcs promoter were produced.

TI Chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**

AB The invention concerns a chimeric gene comprising a light-dependent promoter, a sequence coding for an enzyme providing **plants** with tolerance to herbicides inhibitors of hydroxyphenylpyruvate dioxygenase (HPPD), and a terminator or polyadenylation-regulating sequence, wherein the promoter ensures the. . . binding protein gene LHCP, the plastocyanine gene petE, and the phenylalanine ammonia lyase gene pal. The invention also concerns the **transformation** of **plants** and the **plants transformed** with said chimera gene. It further concerns a method for growing **transformed plants** which consists in applying a HPPD inhibitor for controlling weeds. Thus, isoxaflutole-resistant tobacco **plants** expressing the Pseudomonas fluorescens HPPD gene from the Helianthus annuus rbcs promoter were produced.

IT Gene, **plant**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(LHCP, promoter of; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT Promoter (genetic element)
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(light-dependent; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT **Plant** cell
Seed
(of transgenic **plant**; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT Plasmid vectors
(pRPA-RD-2005; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT Gene, **plant**

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(pal, promoter of; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT Gene, **plant**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(petE, promoter of; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT Gene, **plant**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(rbcS, promoter of sunflower; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT **Plant** (Embryophyta)
Tobacco
(transgenic; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT 141112-29-0, Isoxaflutole
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT 9029-72-5P, **p-Hydroxyphenylpyruvate dioxygenase**
RL: AGR (Agricultural use); BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(gene for; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

IT 225506-07-0, DNA (sunflower gene rbcs promoter)
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process); USES (Uses)
(nucleotide sequence; chimeric light-dependent promoter hydroxyphenylpyruvate dioxygenase gene and transgenic herbicide-resistant **plants**)

L5 ANSWER 2 OF 7 CAPLUS

AB A **p-hydroxyphenylpyruvate dioxygenase** (HPPD) from Pseudomonas with improved resistance to isoxazole inhibitors that may be of use in the development of herbicide-tolerant **plants** is described. Pseudomonas fluorescens resistant to the HPPD-inhibiting herbicide 2-cyano-3-cyclopropyl-1-(2-methylsulfonyl-4-trifluoromethylphenyl)-propan-1,3-dione (I) were selected after hydroxylamine mutagenesis. Mutations in the HPPD gene giving rise to resistance were clustered at three sites. Using this information and comparison of sequences of HPPDs from bacteria, fungi, **plants**, and animals, a no. of site-directed mutants were developed with 12 single mutants and six double mutants obtained. Tobacco tissue **transformed** with expression vectors carrying these genes gave rise to **plants** resistant to up to 8 ppm I were obtained.

TI A herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and the gene encoding it and the development of herbicide-tolerant transgenic **plants**

AB A **p-hydroxyphenylpyruvate dioxygenase** (HPPD) from Pseudomonas with improved resistance to isoxazole inhibitors that may be of use in the development of herbicide-tolerant **plants** is described. Pseudomonas fluorescens resistant to the HPPD-inhibiting herbicide 2-cyano-3-cyclopropyl-1-(2-methylsulfonyl-4-trifluoromethylphenyl)-propan-1,3-dione (I) were selected after hydroxylamine mutagenesis. Mutations in the HPPD. . . rise to resistance were clustered at three sites. Using this information and comparison of sequences of HPPDs from bacteria, fungi, **plants**,

and animals, a no. of site-directed mutants were developed with 12 single mutants and six double mutants obtained. Tobacco tissue **transformed** with expression vectors carrying these genes gave rise to **plants** resistant to up to 8 ppm I were obtained.

IT Michaelis constant
(for 4-hydroxyphenylpyruvate, of 4-hydroxyphenylpyruvate dioxygenase of Synechocystis; herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT Breeding, **plant**
(herbicide resistance in; herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT Pseudomonas
Pseudomonas fluorescens
Synechocystis
(herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT Gene, microbial
RL: AGR (Agricultural use); PRP (Properties); BIOL (Biological study); USES (Uses)
(herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT Enzyme kinetics
(of 4-hydroxyphenyl pyruvate dioxygenase of Synechocystis; herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT Protein sequences
(of 4-hydroxyphenyl pyruvate dioxygenases of Pseudomonas and Synechocystis; herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT Genetic engineering
(of herbicide resistance in **plants**; herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT Herbicide resistance
(to isoxazoles; herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT 170977-26-1 225104-40-5 225104-41-6
RL: AGR (Agricultural use); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(amino acid sequence; herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT 225104-06-3 225104-07-4 225104-09-6 225104-10-9 225104-12-1
225104-13-2 225104-15-4 225104-17-6 225104-18-7 225104-20-1
225104-21-2 225104-22-3 225104-24-5 225104-25-6 225104-27-8
225104-28-9 225104-30-3 225104-31-4 225104-32-5 225104-34-7
225104-35-8 225104-37-0 225104-38-1
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

IT 9029-72-5, **p-Hydroxyphenylpyruvate dioxygenase**
RL: AGR (Agricultural use); PRP (Properties); BIOL (Biological study); USES (Uses)
(herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic

plants)

IT 143701-75-1 145665-36-7 224644-93-3
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(p-hydroxyphenyl pyruvate dioxygenase resistant to; herbicide-resistant 4-hydroxyphenyl pyruvate dioxygenase and gene encoding it and development of herbicide-tolerant transgenic **plants**)

L5 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2002 ACS

AB The invention concerns a nucleic acid sequence coding for the **plant** protein geranylgeranyl pyrophosphate reductase (GGPR), its cloning and **transformation** into prokaryotes or eukaryotes for the increased biosynthesis of tocopherols, vitamin K1 and chlorophyll. Plasmids vectors contg. the GGPR sequence, tissue and developmental-specific promoters, enhancer sequences and signal peptide coding sequences can be transfered in sense or antisense orientation into cells. Feed and fodder **plants** can be **transformed**, e.g. rape, soy, beet, tomato and potato. Targets for **transformation** are propagules, e.g. protoplast, calli, seeds, bulbs etc. The nucleic acid sequence or parts of it can be used as probes for the identification/isolation of nucleic acids coding for GGPR. Also antibodies to the nucleic acid or the GGPR can be raised. The **transformed plants** demonstrate increased herbicide resistance. A version of the invention, a double **transformant** is produced by introducing the nucleic acid sequence coding for hydroxyphenylpyruvate-dioxygenase. The nucleic acid sequence coding for GGPR was isolated from tobacco using an expressed sequence tag from Arabidopsis thaliana; the sequence was inserted into the BinAR-TX behind the CaMV 35S promoter; the vector was **transformed** into Agrobacterium tumefaciens that was used to transfect Nicotiana tabacum. The **transformed** tobacco **plants** manifested increased tocopherol content and GGPR activity. In another expt., the CHL P genes, coding for GGPR were coexpressed with the HPD genes coding for hydroxyphenylpyruvate-dioxygenase using Bin-Hyg-TX vector that carries the hygromycin resistance marker gene. The double **transformant** showed an addnl. increase in tocopherol prodn. and hygromycin resistance. Transgenic tobacco was also subject to oxidative stress using acifluorfen and Rose Bengal. The oxidative stress resistance was 2-3 times higher compared to the wild type.

TI Transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis

AB The invention concerns a nucleic acid sequence coding for the **plant** protein geranylgeranyl pyrophosphate reductase (GGPR), its cloning and **transformation** into prokaryotes or eukaryotes for the increased biosynthesis of tocopherols, vitamin K1 and chlorophyll. Plasmids vectors contg. the GGPR sequence,. . . enhancer sequences and signal peptide coding sequences can be transfered in sense or antisense orientation into cells. Feed and fodder **plants** can be **transformed**, e.g. rape, soy, beet, tomato and potato. Targets for **transformation** are propagules, e.g. protoplast, calli, seeds, bulbs etc. The nucleic acid sequence or parts of it can be used as. . . identification/isolation of nucleic acids coding for GGPR. Also antibodies to the nucleic acid or the GGPR can be raised. The **transformed plants** demonstrate increased herbicide resistance. A version of the invention, a double **transformant** is produced by introducing the nucleic acid sequence coding for hydroxyphenylpyruvate-dioxygenase. The nucleic acid sequence coding for GGPR was isolated. . . sequence tag from Arabidopsis thaliana; the sequence was inserted into the BinAR-TX behind the CaMV 35S promoter; the vector was **transformed** into Agrobacterium tumefaciens that was used to transfect Nicotiana tabacum. The **transformed** tobacco **plants** manifested increased tocopherol content and GGPR activity. In another expt., the CHL P genes, coding for GGPR were coexpressed with

the HPD genes coding for hydroxyphenylpyruvate-dioxygenase using Bin-Hyg-TX vector that carries the hygromycin resistance marker gene. The double **transformant** showed an addnl. increase in tocopherol prodn. and hygromycin resistance. Transgenic tobacco was also subject to oxidative stress using acifluorfen. . .

ST transgenic **plant** geranylgeranyl reductase tocopherol Vitamin K1 chlorophyl tobacco; hydroxyphenylpyruvate dioxygenase geranylgeranyl reductase double **transformant** oxidative stress tobacco

IT Promoter (genetic element)
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(35S; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT **Plant** tissue
(callus; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT Feed
(fodder; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT EST (expressed sequence tag)
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(from Arabidopsis thaliana, for isolating cDNA coding geranylgeranyl pyrophosphate reductase; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT Escherichia coli
(host cell; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT DNA sequences
Protein sequences
(of geranylgeranyl pyrophosphate reductase of tobacco and **p-hydroxyphenylpyruvate dioxygenase** of Arabidopsis; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT Plasmids
(of geranylgeranyl pyrophosphate reductase, DSM 11816; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT **Plant** tissue
(shoot; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT Probes (nucleic acid)
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(to detect and isolate geranylgeranyl pyrophosphate reductase coding DNA; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT Antibodies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(to geranylgeranyl pyrophosphate reductase; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT Beet
Bulb (**plant**)
Cereal (grain)
Herbicide resistance
Nutrition, animal
Oxidative stress, biological
Plant (Embryophyta)
Potato (Solanum tuberosum)
Protoplast and Spheroplast
Rape (**plant**)
Seed

Stress, **plant**
Tobacco
Tomato
(transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT Chlorophylls, biological studies
RL: AGR (Agricultural use); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT 194615-50-4 223914-65-6
RL: AGR (Agricultural use); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(amino acid sequence; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT 50594-66-6, Acifluorfen
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(for oxidative stress; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT 6379-56-2, Hygromycin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(for oxidative stress; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT 219236-72-3, GenBank AJ007789
RL: AGR (Agricultural use); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(nucleotide sequence; transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT 11121-48-5, Rose Bengal
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT 59-02-9, .alpha.-Tocopherol 7616-22-0, .gamma.-Tocopherol 9029-72-5, **p-Hydroxyphenylpyruvate dioxygenase**
11104-38-4, Vitamin K1 86922-67-0, Geranylgeranyl reductase
RL: AGR (Agricultural use); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

IT 190920-94-6, DNA (Arabidopsis thaliana clone pHPPD gene PDS1 plus flanks)
RL: AGR (Agricultural use); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(transgenic **plants** with increased geranylgeranyl reductase activity resulting higher tocopherol biosynthesis)

L5 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2002 ACS

AB A method of producing **plants** which exhibit an agronomically desirable trait comprises mutating or otherwise modifying in situ in a **plant** cell at least one gene which when modified is responsible for providing the said trait and regenerating from a cell exhibiting the said trait fertile morphol. normal whole **plants**. A polynucleotide is introduced into the **plant** cell, the said polynucleotide comprising at least one region which is substantially complementary to at least one region in the gene, which gene region when mutated or otherwise modified provides for the agronomically desirable trait. The region in the said polynucleotide contains at least one base mismatch in comparison with the like region in the said gene, so that the

region in the said gene is altered by the DNA repair/replication system of the cell to include the said mismatch. The method is demonstrated by the use of mutagenic ribo/deoxyribo oligonucleotides specific for the 5-enolpyruvoylshikimate 3-phosphate (EPSP) synthase gene in Brassica napus for the provision of glyphosate resistance.

TI In situ modification of **plant** genes for improved herbicide resistance

AB A method of producing **plants** which exhibit an agronomically desirable trait comprises mutating or otherwise modifying in situ in a **plant** cell at least one gene which when modified is responsible for providing the said trait and regenerating from a cell exhibiting the said trait fertile morphol. normal whole **plants**. A polynucleotide is introduced into the **plant** cell, the said polynucleotide comprising at least one region which is substantially complementary to at least one region in the. . .

ST **plant** genetic engineering herbicide resistance; enolpyruvoylshikimate phosphate synthase gene mutagenesis herbicide resistance

IT Fungicides
Insecticides
(co-treatment with; in situ modification of **plant** genes for improved herbicide resistance)

IT Grass (Poaceae)
(forage; in situ modification of **plant** genes for improved herbicide resistance)

IT Alfalfa (Medicago sativa)
Apple
Arabidopsis thaliana
Banana (Musa)
Barley
Bean (Phaseolus vulgaris)
Brassica napus
Cabbage
Canola
Carrot
Citrus
Corn
Cotton
Flax
Genetic engineering
Grape
Herbicide resistance
Lettuce (Lactuca sativa)
Mango (Mangifera indica)
Melon (**plant**)
Mutagenesis
Nut (seed)
Oat
Onion (Allium cepa)
Pea
Peach (Prunus persica)
Pear (Pyrus communis)
Plant (Embryophyta)
Poplar (Populus)
Potato (Solanum tuberosum)
Rape (**plant**)
Rice (Oryza sativa)
Rye
Sorghum
Soybean (Glycine max)
Strawberry
Sugar beet
Sugarcane
Sunflower

Tobacco
Tomato
  Transformation, genetic
Turf
Weed control
Wheat
   (in situ modification of **plant** genes for improved herbicide resistance)

IT Photosystem II
   (resistance to herbicides of; in situ modification of **plant** genes for improved herbicide resistance)

IT Tubulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
   (resistance to herbicides of; in situ modification of **plant** genes for improved herbicide resistance)

IT 111093-14-2, Synthase, 5-enolpyruvoylshikimate 3-phosphate (petunia clone pMON546 precursor reduced) 217180-27-3
RL: AGR (Agricultural use); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process); USES (Uses)
   (amino acid sequence; in situ modification of **plant** genes for improved herbicide resistance)

IT 217093-06-6 217093-07-7
RL: PRP (Properties)
   (enolpyruvoylshikimate phosphate synthase fragment from Brassica napus; in situ modification of **plant** genes for improved herbicide resistance)

IT 9001-37-0, GLucose oxidase 9068-73-9, EPSP synthase
RL: AGR (Agricultural use); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
   (gene for; in situ modification of **plant** genes for improved herbicide resistance)

IT 217444-36-5 217444-38-7
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
   (mutagenic oligonucleotide for EPSP synthase gene of Brassica napus; in situ modification of **plant** genes for improved herbicide resistance)

IT 217445-01-7
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
   (mutagenic oligonucleotide for bleaching herbicide R390244 resistance in tomato; in situ modification of **plant** genes for improved herbicide resistance)

IT 217444-39-8
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
   (mutagenic oligonucleotide for chlorsulfuran resistance in corn; in situ modification of **plant** genes for improved herbicide resistance)

IT 217444-40-1 217444-41-2 217444-60-5 217444-67-2 217489-34-4
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
   (mutagenic oligonucleotide for glyphosate resistance in Arabidopsis; in situ modification of **plant** genes for improved herbicide resistance)

IT 217444-70-7 217444-71-8 217444-73-0 217444-74-1 217444-75-2
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
   (mutagenic oligonucleotide for glyphosate resistance in Brassica napus; in situ modification of **plant** genes for improved herbicide resistance)

IT 217444-77-4 217444-81-0 217444-86-5 217444-90-1 217444-95-6
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
   (mutagenic oligonucleotide for glyphosate resistance in corn; in situ modification of **plant** genes for improved herbicide resistance)

IT 139798-54-2, GenBank M21084 140332-81-6, GenBank X51475 217180-28-4 217180-29-5

RL: AGR (Agricultural use); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process); USES (Uses)
(nucleotide sequence; in situ modification of **plant** genes for improved herbicide resistance)

IT 9023-93-2, ACETYL COA carboxylase 9024-35-5, Imidazole glycerol phosphate dehydratase 9027-18-3, Cellulose synthase 9027-19-4, Cellulose synthase 9027-45-6, Acetolactate synthase 9029-72-5, **p-Hydroxyphenylpyruvate dioxygenase**
53986-32-6, Protoporphyrinogen oxidase 107544-21-8, Phytoene desaturase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(resistance to herbicides of; in situ modification of **plant** genes for improved herbicide resistance)

IT 618-87-1, Dinitroaniline 1071-83-6 4685-14-7, Paraquat 51276-47-2, Glufosinate 64902-72-3, Chlorsulfuron
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(resistance to; in situ modification of **plant** genes for improved herbicide resistance)

L5 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2002 ACS

AB The biochem. characterization of carrot recombinant **p-hydroxyphenylpyruvate dioxygenase** (HPPD,) and the mol. characterization and sub-cellular localization of the corresponding enzyme from Arabidopsis thaliana is reported. The carrot cDNA gene for HPPD was cloned and expressed into Escherichia coli JM105 and then purified by chromatog. The purified carrot HPPD had a specific activity of 0.4 .mu.mol/mg protein and the KM for hydroxyphenylpyruvate was 5.mu.M. The recombinant enzyme like the native enzyme was inhibited by isoxazoles. A. thaliana HPPD cloned from cDNA was a polypeptide of 445 amino acids with a mol. wt. of 48671 Da. and had a 75% sequence identity with carrot HPPD. A. thaliana HPPD had the same biochem. characteristics as the carrot HPPD and was specifically recognized by polyclonal antibody raised against the purified carrot HPPD. A. thaliana HPPD was overexpressed in tobacco and the subcellular localization of the resulting protein was examd. by immunocytochem. In tobacco sections, no reactions over the level of the background was obsd. in the chloroplasts, mitochondria, or peroxisomes while a specific reaction occurred in the cytosolic compartment. This result demonstrates that A. thaliana HPPD does not contain any targeting signal.

TI **Plant p-hydroxyphenylpyruvate dioxygenase**: a target for new bleaching herbicides

AB The biochem. characterization of carrot recombinant **p-hydroxyphenylpyruvate dioxygenase** (HPPD,) and the mol. characterization and sub-cellular localization of the corresponding enzyme from Arabidopsis thaliana is reported. The carrot cDNA. . .

IT Enzyme kinetics
(Michaelis-Menten; recombinant **plant p-hydroxyphenylpyruvate dioxygenase**)

IT Cytoplasm
(cytosol; recombinant **plant p-hydroxyphenylpyruvate dioxygenase**)

IT Arabidopsis thaliana
Carrot
Chloroplast
Mitochondria
Molecular cloning
Peroxisome
Tobacco
Transformation, genetic
(recombinant **plant p-hydroxyphenylpyruvate dioxygenase**)

IT cDNA
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC

(Process)
(recombinant **plant p-hydroxyphenylpyruvate dioxygenase**)

IT Transit peptides
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(recombinant **plant p-hydroxyphenylpyruvate dioxygenase**)

IT 143701-75-1
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(recombinant **plant p-hydroxyphenylpyruvate dioxygenase**)

IT 7782-44-7, Oxygen, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(recombinant **plant p-hydroxyphenylpyruvate dioxygenase**)

IT 9029-72-5P, **p-Hydroxyphenylpyruvate dioxygenase**
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); PROC (Process)
(recombinant; recombinant **plant p-hydroxyphenylpyruvate dioxygenase**)

L5 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2002 ACS

AB The invention relates to the isolation and modification of nucleic acid sequences encoding **p-hydroxyphenylpyruvate dioxygenase** (I) enzyme from **plants**. These nucleic acid sequences were used to establish methods of identification of new herbicidal compds. that inhibit the activity of this enzyme, and to prep. new crop **plants** that are tolerant to the herbicidal action of I inhibitors. Chimeric genes comprising nucleic acid fragments contg. all or part of the corn or Arabidopsis thaliana I genes may be used to produce active **plant** I in microorganisms such as Escherichia coli, and to cause the prodn. or overexpression of modified forms of I in **plants** that may render such **plants** tolerant to inhibitors of the enzyme. The methodol. can be used in cereal crop **plants**.

TI Cloning and expression of recombinant **p-hydroxyphenylpyruvate dioxygenase plant** genes for production of resistant cereal **plants**

AB The invention relates to the isolation and modification of nucleic acid sequences encoding **p-hydroxyphenylpyruvate dioxygenase** (I) enzyme from **plants**. These nucleic acid sequences were used to establish methods of identification of new herbicidal compds. that inhibit the activity of this enzyme, and to prep. new crop **plants** that are tolerant to the herbicidal action of I inhibitors. Chimeric genes comprising nucleic acid fragments contg. all or part of the corn or Arabidopsis thaliana I genes may be used to produce active **plant** I in microorganisms such as Escherichia coli, and to cause the prodn. or overexpression of modified forms of I in **plants** that may render such **plants** tolerant to inhibitors of the enzyme. The methodol. can be used in cereal crop **plants**.

ST hydroxyphenylpyruvate dioxygenase gene **plant** herbicide resistance; corn Arabidopsis hydroxyphenylpyruvate dioxygenase gene cloning; sequence hydroxyphenylpyruvate dioxygenase gene Arabidopsis

IT Cereal (grain)
Corn
Escherichia coli
Genetic engineering
Herbicide resistance
Molecular cloning

Plasmid vectors
Protein sequences
  Transformation, genetic
cDNA sequences
   (Cloning and expression of recombinant **p-**
   hydroxyphenylpyruvate dioxygenase plant
   genes for prodn. of resistant cereal **plants**)

IT Gene, **plant**
RL: AGR (Agricultural use); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
   (chimeric, for **p-hydroxyphenylpyruvate dioxygenase**; Cloning and expression of recombinant **p-hydroxyphenylpyruvate dioxygenase plant** genes for prodn. of resistant cereal **plants**)

IT Arabidopsis thaliana
   (**p-hydroxyphenylpyruvate dioxygenase** gene of; Cloning and expression of recombinant **p-hydroxyphenylpyruvate dioxygenase plant** genes for prodn. of resistant cereal **plants**)

IT Chimeric gene
RL: AGR (Agricultural use); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
   (**plant**, for **p-hydroxyphenylpyruvate dioxygenase**; Cloning and expression of recombinant **p-hydroxyphenylpyruvate dioxygenase plant** genes for prodn. of resistant cereal **plants**)

IT 9029-72-5, **p-Hydroxyphenylpyruvate dioxygenase**
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
   (Cloning and expression of recombinant **p-hydroxyphenylpyruvate dioxygenase plant** genes for prodn. of resistant cereal **plants**)

IT 194615-50-4 201556-70-9 201615-55-6 201615-56-7
RL: AGR (Agricultural use); PRP (Properties); BIOL (Biological study); USES (Uses)
   (amino acid sequence; Cloning and expression of recombinant **p-hydroxyphenylpyruvate dioxygenase plant** genes for prodn. of resistant cereal **plants**)

IT 201556-69-6 201556-71-0 201556-72-1 201556-73-2 201556-74-3
RL: AGR (Agricultural use); PRP (Properties); BIOL (Biological study); USES (Uses)
   (nucleotide sequence; Cloning and expression of recombinant **p-hydroxyphenylpyruvate dioxygenase plant** genes for prodn. of resistant cereal **plants**)

L5 ANSWER 7 OF 7 AGRICOLA DUPLICATE 1

AB **p-Hydroxyphenylpyruvate dioxygenase** catalyses the **transformation** of p-hydroxyphenylpyruvate into homogentisate. In **plants** this enzyme has a crucial role because homogentisate is the aromatic precursor of all prenylquinones. Furthermore this enzyme was recently identified as the molecular target for new families of potent herbicides. In this study we examine precisely the localization of **p-hydroxyphenylpyruvate dioxygenase** activity within carrot cells. Our results provide evidence that, in cultured carrot cells, **p-hydroxyphenylpyruvate dioxygenase** is associated with the cytosol. Purification and SDS/PAGE analysis of this enzyme revealed that its activity is associated with a polypeptide of 45-46 kDa. This protein specifically cross-reacts with an antiserum raised against the **p-hydroxyphenylpyruvate dioxygenase** of Pseudomonas fluorescens. Gel-filtration chromatography indicates that the enzyme behaves as a homodimer. We also report the isolation and nucleotide sequence of a cDNA encoding a carrot **p-**

hydroxyphenylpyruvate dioxygenase. The nucleotide
sequence (1684 bp) encodes a protein of 442 amino acid residues with a
molecular mass of 48094 Da and shows specific C-terminal regions of
similarity with other **p-hydroxyphenylpyruvate**
dioxygenases. This cDNA encodes a functional **p-**
hydroxyphenylpyruvate dioxygenase, as evidenced by
expression studies with **transformed** Escherichia coil cells.
Comparison of the N-terminal sequence of the 45-46 kDa polypeptide
purified from carrot cells with the deduced peptide sequence of the cDNA
confirm that this polypeptide supports **p-**
hydroxyphenylpyruvate dioxygenase activity.
Immunodetection studies of the native enzyme in carrot cellular extracts
reveal that N-terminal proteolysis occurs during the process of
purification. This proteolysis explains the difference in molecular masses
between the purified protein and the deduced polypeptide.

TI Subcellular localization and purification of a **p-**
hydroxyphenylpyruvate dioxygenase from cultured carrot
cells and characterization of the corresponding cDNA.

AB **p-Hydroxyphenylpyruvate dioxygenase**
catalyses the **transformation** of p-hydroxyphenylpyruvate into
homogentisate. In **plants** this enzyme has a crucial role because
homogentisate is the aromatic precursor of all prenylquinones. Furthermore
this enzyme was recently. . . identified as the molecular target for
new families of potent herbicides. In this study we examine precisely the
localization of **p-hydroxyphenylpyruvate**
dioxygenase activity within carrot cells. Our results provide
evidence that, in cultured carrot cells, **p-**
hydroxyphenylpyruvate dioxygenase is associated with the
cytosol. Purification and SDS/PAGE analysis of this enzyme revealed that
its activity is associated with a polypeptide of 45-46 kDa. This protein
specifically cross-reacts with an antiserum raised against the **p**
-hydroxyphenylpyruvate dioxygenase of Pseudomonas
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Immunodetection studies of the native enzyme in carrot cellular extracts
reveal that N-terminal proteolysis occurs during the process of. . .

RN 9029-72-5 (P-HYDROXYPHENYLPYRUVATE DIOXYGENASE)
67254-75-5 (PROTEOLYSIS)

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